

Clinical Remarks

ON

Division of the Vas Deferens in Cases of Obstructive Prostatic Hypertrophy

(Communicated to the Society of Surgeons at the January 3, 1887)

BY

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(Reprinted from "The Lancet," February 7, 1887)

London

JOHN BALE & SONS

OXFORD HOUSE

25 & 27, GREAT TID STREET, SPARK, OXFORD STREET, W.

1887





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Division of the Vas Deferens in Cases of Obstructive Prostatic Hypertrophy.

Delivered at St. Peter's Hospital on Jan. 3, 1896.

BY REGINALD HARRISON, F.R.C.S.ENG.,

SURGEON TO THE HOSPITAL.

GENTLEMEN,—I shall confine my remarks to division of the vas deferens as a remedy for enlarged prostate. In 1893 Dr. W. White, of Philadelphia, suggested that castration might be tried as a remedy for troubles connected with certain forms of prostatic hypertrophy, with the result that this practice has now been adopted in numerous instances with some amount of success. It is interesting to notice, now that attention has been called to the possibility of its practical application, how often the fact has been stated in surgical literature that interference with portions of the genito-urinary tract is followed by atrophy of the prostate. Only the other day, in reading an excellent treatise on this organ by Dr. Decimus Hodgson (published by Messrs. Churchill in 1856), I notice that it is observed: "In persons who have been castrated the prostate dwindles down almost to a rudimentary condition."

At an early period in this investigation it seemed to me that without resorting to such extremes as the removal of both, or even one, of the testes, good results might probably

be obtained at far less risk by the simple expedient of division of the vasa. Apart from a casual case of this kind, which came under my care some years ago and has since been reported,¹ where I successfully practised this expedient, there is collateral testimony in favour of it. If we turn to records of injuries to the vas deferens it will be found that Birkett, Hilton, and others have shown² that atrophy of the testis is a sequence in the human male of rupture or section of this duct. If this is so, why should we not take advantage of it, and in this way induce prostatic atrophy without resorting to castration? It is probable that in a certain number of prostatic cases the amount of shrinkage of the gland necessary to make all the difference between a life of misery and one of comfort is comparatively slight. This is a conclusion which may fairly be drawn from the observation that, although prostatic enlargement is common, only a small number of males thus affected can be said to suffer from it. I am disposed to think, from what I have already seen, that division of one vas or both vasa is capable of providing, in many instances, the relief that is thus desired. Then there is the further consideration that, if the minor proceeding fails, castration may still be resorted to without prejudice. There can be no doubt that in elderly men the latter operation often proves to be a very serious matter.

I will now proceed to mention certain effects noted as having followed division of one vas or both vasa in the human species. In the first place, some change in the size or consistence of the testis in the way of shrinking or softening has generally been evident in the course of a few days. Following upon this, analogous alterations have been discovered by rectal examination as taking place in the prostate, corresponding, of course, to whether one vas or both vasa were divided. In others the latter changes have been inferred more by the easier introduction of the catheter which followed, or, as some patients remarked, by the lesser

¹ *Brit. Med. Jour.*, September 23, 1893.

² *Holmes's System of Surgery*, first edition, vol. ii.

distance the instrument had to traverse the urethra before urine flowed, than by recognisable structural alterations. I have also noted that the intervals between urinations become rapidly more prolonged; in some instances periods of two and three hours have been doubled. Further, the easier passage of instruments into the bladder which has generally followed has reduced liability both to hæmorrhages and cystitis. Hence urine which previously was discoloured, cystitic and offensive, became gradually normal both in appearance and composition. Prostatic spasm has also been noted as ceasing. Some of these effects are probably due to a diminished blood current through the prostate following upon the operation. I cannot say that I have yet met with an instance where a patient who has long been habituated from prostatic enlargement to the use of the catheter has been able entirely to discard it, though, as already stated, the application of the instrument may subsequently have ceased to be a cause of distress. I believe, also, that where the bladder has been pouched, as is so frequently the case in instances of enlarged prostate, removal of the urine with the catheter has been more completely accomplished. For the same reason irrigation of the bladder, when necessary, has been more effectually practised. I think that these results have followed the division of the vasa, not by the inducement of a complete atrophy of the prostate, but of a degree and kind sufficient for the purpose.

In explaining the somewhat varied effects following this and kindred operations on the genito-urinary tract it must be remembered that the enlarged prostates of elderly men vary considerably in their structure and consistence. Putting aside instances of carcinomatous, tuberculous, and such-like glands where these operations are inappropriate, it will be found that where muscular tissue predominates greater good may be expected and usually follows than where these proportions are reversed and the part is reduced to a condition allied with a fibroma. However, as it is not always easy to accurately determine these structural

differences beforehand, the greater is the reason why a tentative measure, should, in case of doubt, be first undertaken. Pedunculated fibromatous prostates causing obstruction and cystitis will probably still be best treated by supra-pubic prostatectomy. The effects that follow division of the vasa relatively to the genital function may be stated as being in general correspondence with those which are observed after castration. A unilateral operation leaves this function much in the same state as previously existed, whilst the severance of both tubes may be said to be likely to abolish it. The most perfect example of unilateral testicular atrophy I ever saw followed rapidly upon the accidental division of the corresponding vas deferens in an operation for varicocele. As the subject of this accident is now the father of several healthy children it does not appear that the procreative process in this instance suffered very materially.

I will now pass on to describe the method I employ in the division of the vas deferens and to illustrate clinically its application. After trying several plans for dividing the vas after passing through the external abdominal ring subcutaneous and otherwise, the following appears to be the best. The scrotum having been shaved and prepared antiseptically, the tube is carefully sought for as it enters the scrotum. It being held subcutaneously in position between the finger and the thumb, a vertical incision through the skin is made over it to the extent of an inch or so. The spermatic cord having been recognised, the vas is separated from the other constituents by the finger and forceps by merely carefully teasing away the connective tissue about it. In doing this care should be taken not to drag on the testicle too much, but to support it whilst a loop of vas is detached, so that the connexions of the former may not be loosened. The vas should be well cleared of all other textures, and then a loop of it is gently drawn out through the wound with a blunt hook (fig.). The loop is then encircled below the hook with a silk ligature (*b*), not too thick, which is tightly knotted. The ligature is cut off

short, the extraneous portion of vas removed by scissors, (*a*) and the pedicle dropped into its place. The wound is closed with a catgut suture or two, and fitted with a small drainage tube. There is no bleeding worth mentioning if the operation is done in this way, and the wound usually heals in the course of a few days. I have reasons for believing that in a short time the vas, thus treated, becomes converted into a fibrous cord, which eventually, with the



corresponding testicle, undergoes atrophy. If the vas, before the ligature is applied, is carefully cleared of other tissues pain is not usually complained of, as is often the case when the whole thickness of the spermatic cord is included in a ligature, as is sometimes done in cases of castration. Both vasa may be so treated simultaneously, but I prefer doing one at a time, and then, if the object is

not sufficiently attained, proceeding subsequently with the other. It will be found that, so far as the technique of the operation is concerned relative to the general condition of an enfeebled patient, it compares favourably with either single or double castration. If anticipations are realised, as seems likely to be the case, unilateral or even bilateral division of the vasa will be resorted to at an earlier period of the disorder than would be the case if ablation of the testicles was the only alternative. The possibility of dilatation and atrophy of the kidneys arising out of frequent and obstructed micturition, as indicated by changes in the urine, would be sufficient to require this should other measures fail in relieving such symptoms as hypertrophy of the prostate not infrequently occasions.

I will now briefly refer to two cases illustrative of some of these remarks. The first is that of a man, aged 73, whom I saw in October, 1894, who had a very large prostate and an irritable bladder, and was almost entirely dependent on the use of the catheter. The frequency in passing urine increased, and the latter became very foul and ammoniacal. In the course of a few weeks phosphatic concretion took place, and I removed some stone with the lithotrite. Relief followed this, and the sound showed that the bladder was apparently clear. In the course of weeks the old prostatic symptoms returned with greater severity, and the catheter was again resorted to about every hour both day and night. In October, 1895, it was again necessary to clear the bladder by the lithotrite of encasing phosphates, and at the same time, after explaining matters to him, I took the opportunity of dividing the left vas in the manner described. He was in a surgical institution whilst this was done, and able to return home on the seventh day. I have seen him since, and the contrast between his condition now as compared with what it was prior to the latter proceeding is most marked. The testis and prostate are both undergoing atrophy, his catheter enters without provoking spasm, and quite easily, and, as he remarks, "I reach urine sooner by an inch than I did previously." He is able to hold his

urine comfortably for five or six hours, and can spontaneously expel more than he previously did. Further, his urine is perfectly clear, with a normally acid reaction, a condition which had never been previously arrived at since I have known him.

The second case is one you saw me operate upon a month ago, and as, so far as I can judge, no stone or other complicating condition exists, you can form a fair opinion as to the more immediate effects of this operation, so far as the prostate alone is concerned. I took the patient into hospital for the reason that the frequency of his micturition was about every two hours, both day and night, or even oftener, according to his statement, under which irritation his general health not unnaturally was giving way. He had a large prostate with the left lobe predominating, but he was not dependent on the catheter. Having explained the matter to him, Mr. W. Braine administered ether, and I divided the left vas in the manner described. I should mention that this patient is 72 years of age. He has already derived advantage in respect of the symptoms complained of, and the case is one which may be watched with advantage. Whatever explanation may be offered, within a week after the operation the patient was able to retain his urine for the whole night. He left the hospital on the tenth day and has since reported himself as well.

In the opinion I have formed as to the utility and propriety of dividing the vas in cases coming under this category I do not stand alone, and unless I am mistaken I anticipate that further evidence in support of it will soon be forthcoming. The literature, however, will already be found to confirm some of the conclusions I have thus ventured to formulate. Too much importance must not be attached to some experiments on animals which have been made in connection with this subject. The moral influence of certain conditions and the material changes they give rise to, in their relation to the genital function in the human male, find no counterpart in the animal species so far as I have been able to ascertain. In offering these remarks on

this aspect of a most important subject I do so in the belief that the case as I have endeavoured to put it, though not fully proven, has been sufficiently made out by direct and indirect investigation as to warrant a fair trial being made of it before we adopt castration as a remedy for prostatic hypertrophy and certain of the troubles arising out of it.

In a paper I have read since these remarks were made Professor Guyon, of Paris,³ has added important testimony in favour of this proceeding. He publishes the particulars of two cases of bilateral division of the vasa in men 70 years of age or thereabout, where the benefits obtained were prompt and conspicuous, and in correspondence with effects I have already noted. The paper contains a brief history and other experiences of the operation, and is deserving of careful study.

³ Congrès de Chirurgie, Paris, 1895.